MTP HDMI U R

TWISTED PAIR RECEIVER FOR HDMI, VGA, VIDEO, AUDIO, AND RS-232

- Accepts digital and analog video formats
- Receives HDMI or DVI twisted pair signals
- HDCP compliant
- HDMI 1.3 compatible
- Receives MTP Twisted Pair signals for RGBHV, HD component video, S-video, composite video, mono audio, and RS-232
- Automatically routes incoming signals to appropriate connectors
- Separate variable level and peaking controls
- Dual mono audio output
- Supports bi-directional RS-232 signals
- 1U, half rack width metal enclosure

The Extron MTP/HDMI U R is a universal twisted pair receiver that accepts analog and digital video formats. It delivers video or RGB, HDMI, and mono audio output as well as bi-directional RS-232 signals, enabling transmission of analog and digital video signals over CAT 5-type cables to a single display location.

DESCRIPTION

The **MTP/HDMI U R** is a universal Twisted Pair Receiver that consolidates digital and analog video formats into a single product, delivering digital video, analog video, mono audio, and RS-232 signals from remote locations. It features an HDCP-compliant, HDMI/DVI 201 Series-compatible twisted pair input, plus a Universal MTP Twisted Pair input that accepts all common analog video formats, from composite video to HDTV and high resolution RGB from an MTP Series transmitter. Either input supports bi-directional RS-232 signals for remote control of a display device. The MTP/HDMI U R includes separate variable level and peaking controls and automatic signal format detection for incoming MTP signals. The 1U, half rack width metal enclosure allows for convenient mounting at the display.

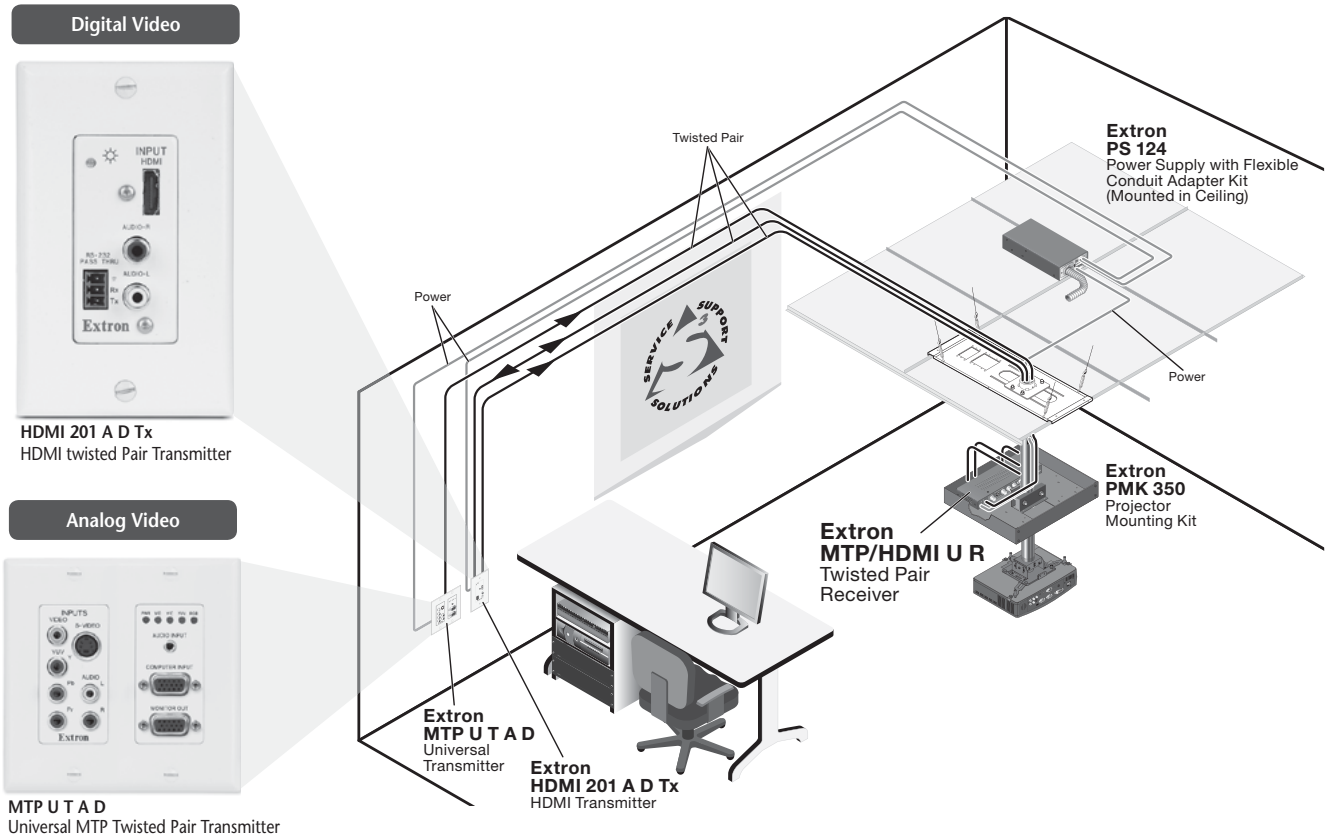
The MTP/HDMI U R receives HDMI or DVI signals up to HDTV 1080p/60 and UXGA sent over 100 feet (30 meters), and over 200 feet (60 meters) for HDTV 1080i and 720p. MTP signals up to HDTV 1080p/60 and UXGA can be received over 300 feet (90 meters) of twisted pair cable.

With automatic signal format detection, the MTP/HDMI U R automatically detects the incoming video signal through the MTP input, as well as an incoming audio or RS-232 control signal. The incoming signals are then routed to the appropriate output connectors. The MTP/HDMI U R outputs dual mono audio, delivered from the MTP Twisted Pair input, as unbalanced or balanced signals.

FEATURES

- **Accepts digital and analog video formats**
- **HDMI twisted pair input compatible with HDMI 201 and DVI 201 Series Twisted Pair Transmitters**
- **MTP Twisted Pair input compatible with MTP Series Twisted Pair Transmitters, Switchers, and DAs, as well as MTPX and MTPX Plus Twisted Pair Matrix Switchers**
- **Receives HDMI or DVI twisted pair signals** – The MTP/HDMI U R accepts HDMI or DVI signals via two twisted pair cables.
- **HDCP compliant**
- **HDMI 1.3 compatible**
- **Receives MTP Twisted Pair signals for RGBHV, HD component video, S-video, composite video, mono audio, and RS-232**
- **Automatically routes incoming analog video signals to appropriate output connectors**
- **Compatible with HDTV component video, bi-level or tri-level sync**
- **Separate variable level and peaking controls**
- **Dual mono audio output** – The MTP/HDMI U R outputs balanced or unbalanced dual mono audio signals through the MTP Twisted Pair input.
- **Supports bi-directional RS-232 signals** – Through the MTP or HDMI twisted pair input, the MTP/HDMI U R can receive and output bi-directional RS-232 signals, enabling remote control of a projector or flat-panel display.
- **LED indicators for source signal presence and power**
- **Plenum rated - meets UL 2043 for heat and smoke release, excluding power supply**
- **1U, half rack width metal enclosure** – The MTP/HDMI U R can be discreetly installed above a projector or behind a flat-panel display.

DIGITAL AND ANALOG VIDEO APPLICATIONS



VIDEO

MTP input
- Gain ..... Unity

HDMI digital input
- Maximum data rate ..... 6.75 Gbps (2.25 Gbps per color)
- Maximum pixel clock ..... 225 MHz
- Resolution range
  - Analog ..... Up to 2048x1080 or 1080p @ 60 Hz
  - Digital ..... Up to 1920x1200 or 1080p @ 60 Hz
- Formats ..... RGB and YCbCr digital video
- Standards ..... DVI 1.0, HDMI 1.3

VIDEO INPUT

Number/signal type
- MTP input ..... 1 set of proprietary analog signals
- HDMI digital input ..... 1 set of proprietary digital signals

Connectors
- MTP input ..... 1 female RJ-45
- HDMI digital input ..... 2 female RJ-45

VIDEO OUTPUT

Number/signal type
- Analog output ..... 1 RGBHV, RGBS, component video (bi-level and tri-level), S-video, composite video (follows input type)
- HDMI digital output ..... 1 single link HDMI (or DVI-D*)

Connectors
- Analog output ..... 1 female 15-pin HD for RGB
  3 female BNC for Y, R-Y, B-Y
  1 female 4-pin mini DIN for S-video (Y/C)
  1 female BNC for composite video
- HDMI digital output ..... 1 female HDMI type A

Nominal levels ..... Analog outputs:
1 Vp-p for Y of component video and S-video, and for composite video
0.7 Vp-p for RGB and for R-Y and B-Y of component video
0.3 Vp-p for C of S-video

Minimum/maximum levels ..... Analog outputs: 0.8 V to 1.2 Vp-p

Impedance ..... Analog outputs: 75 ohms (during video output only)

Return loss ..... Analog outputs: <-30 dB @ 5 MHz (during video output only)

DC offset ..... Analog outputs: <±20 mV with input at 0 offset

Maximum resolution
- Analog output ..... Up to 2048x1080 or 1080p at 60 Hz
- HDMI digital output ..... Up to 1920x1200 or 1080p at 60 Hz

NOTE: Refer to the user's manual for the maximum distances recommended for specific resolutions.

SYNC — ANALOG OUTPUTS

Output type ..... RGBHV, RGBS, component video (bi- or tri-level)

Standards ..... NTSC 3.58, NTSC 4.43, PAL, SECAM

Output level ..... 4.0 V to 5.0 Vp-p, unterminated

Output impedance ..... 87 ohms (24 mA)

Polarity ..... Positive or negative (selectable)

AUDIO — FROM MTP INPUT

Gain ..... Unbalanced output: 0 dB; balanced output: +6 dB

Frequency response ..... 20 Hz to 20 kHz, ±0.06 dB

THD + Noise ..... 0.5% @ 1 kHz, 0.3% @ 20 kHz at nominal level

S/N ..... >70 dB at maximum output (unweighted)

AUDIO INPUT — from MTP input, see MTP transmitter's audio output specifications

Number/signal type ..... 1 set of proprietary analog signals

Connectors ..... 1 female RJ-45

NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu

AUDIO OUTPUT — FROM MTP INPUT

Number/signal type ..... 2 mono, balanced/unbalanced

Connectors ..... (1) 3.5 mm captive screw connector, 5 pole

Impedance ..... 50 ohms unbalanced, 100 ohms balanced

Gain error ..... ±1 dB channel to channel

CONTROL/REMOTE — external device (pass-through) from the HDMI input

Serial control port input/output ..... RS-232 via (1) 3.5 mm, 3 pole captive screw connector

NOTE: The serial communications link of an MTP/HDMI U R is bidirectional (default for the HDMI side), **unless** the receiver's DIP switch is set for RS-232 on the MTP input.

Set up the receiver for unidirectional communication when it is to be used with an MTP DA to avoid any RS-232 issues.

When used with an MTPX matrix switcher, set up the receiver for unidirectional transmitter-to-receiver communication; otherwise it should be set to bidirectional when using the RS-232 output insert connections on the matrix.

Serial control pin configuration ..... Captive screw connector: 1 = Tx, 2 = Rx, 3 = GND

CONTROL/REMOTE — external device (pass-through) from the MTP input

Serial control port input/output ..... RS-232 via (1) 3.5 mm, 3 pole captive screw connector

NOTE: The serial communications link of an MTP/HDMI U R is bidirectional by default but can be unidirectional or bidirectional when coming from the MTP side. Set the receiver's DIP switch for the desired format.

Set up the receiver for unidirectional communication when it is to be used with an MTP DA to avoid any RS-232 issues.

When used with an MTPX matrix switcher, set up the receiver for unidirectional transmitter-to-receiver communication; otherwise it should be set to bidirectional when using the RS-232 output insert connections on the matrix.

Baud rates ..... Up to 38400 bps at up to 600' (183 m) (Higher data rates and distances are possible. Performance varies based on baud rate and cable length.)

Protocol ..... Data bits = 5 - 8
Stop bits = 1 or 2
Parity = odd, even, none
Flow control = XON, XOFF, none

NOTE: Protocol is mirrored between the transmitter and the receiver.

Serial control pin configuration ..... Captive screw connector: 1 = Tx, 2 = Rx, 3 = GND

GENERAL

Recommended cable type
- MTP input ..... CAT 5/5e/6 (shielded or unshielded)
- HDMI digital input ..... CAT 5/5e/6/7 (shielded or unshielded)

External power supply ..... 100 VAC to 240 VAC, 50-60 Hz, external; to 12 VDC, 1 A, regulated

Power input requirements ..... 12 VDC, 0.5 A

Temperature/humidity ..... Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing
Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing

Cooling ..... Convection, vents on top and sides

Mounting
- Rack mount ..... Yes, with optional 1U rack shelf
- Furniture mount ..... Yes, with optional under-desk mounting kit
- Pole mount ..... Yes, with optional projector mounting kit

Enclosure type ..... Metal

Enclosure dimensions ..... 1.7" H x 8.75" W x 3.0" D (half rack wide)
(4.3 cm H x 22.2 cm W x 7.6 cm D)
(Depth excludes connectors.)

Product weight ..... 0.8 lbs (0.4 kg)

Shipping weight ..... 2 lbs (1 kg)

Vibration ..... ISTA 1A in carton (International Safe Transit Association)

Regulatory compliance
- Safety ..... CE, c-UL, UL
- EMI/EMC ..... CE, C-tick, FCC Class A, ICES, VCCI

MTBF ..... 30,000 hours

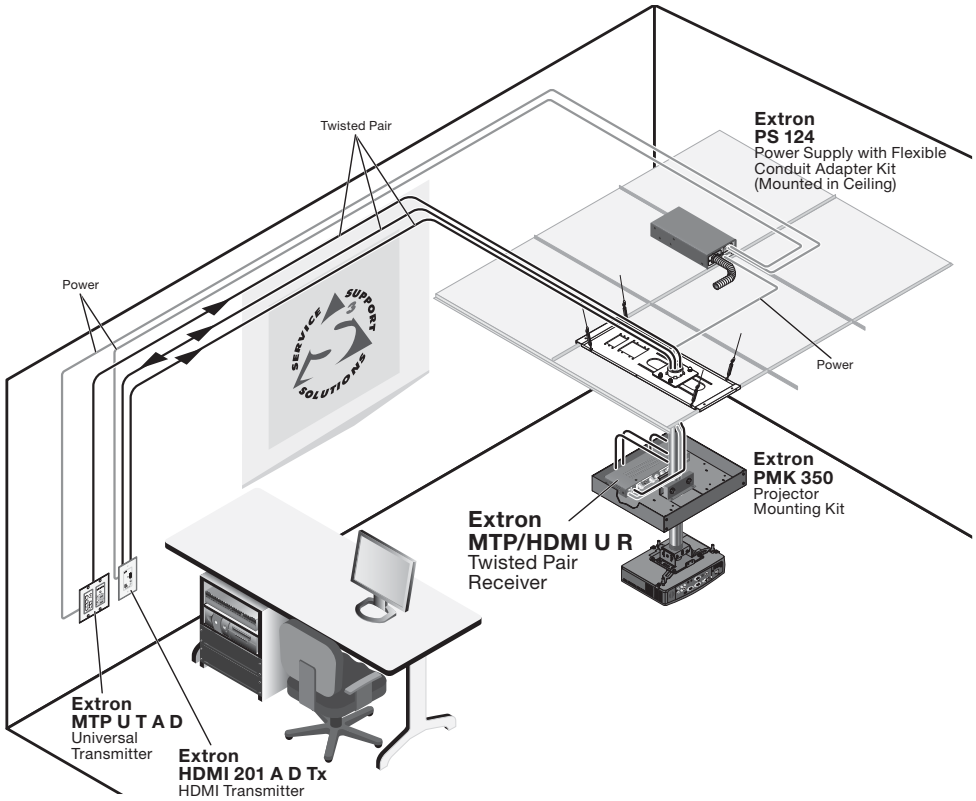
Warranty ..... 3 years parts and labor

NOTE: All nominal levels are at ±10%.

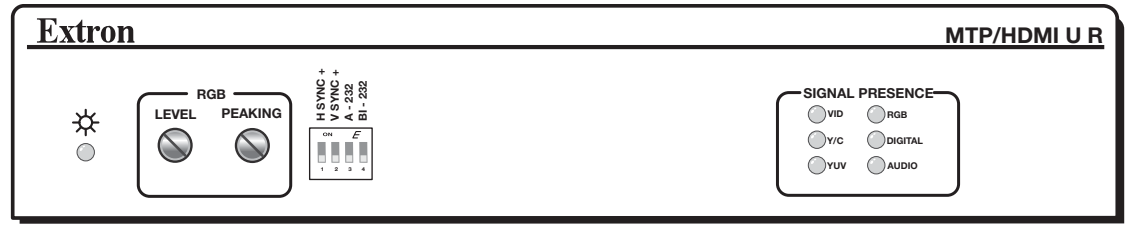
Model	Version Description	Part number
MTP/HDMI U R	HDMI/VGA/Video Twisted Pair Receiver	60-1048-01

Specifications are subject to change without notice.

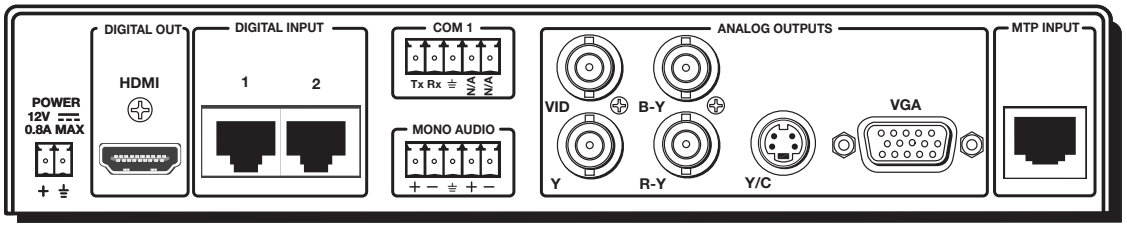
APPLICATION DIAGRAM



PANEL DRAWINGS



Front



Back

Extron **USA - West**
Headquarters
+800.633.9876
Inside USA / Canada Only
+1.714.491.1500
+1.714.491.1517 FAX

Extron **USA - East**
+800.633.9876
Inside USA / Canada Only
+1.919.863.1794
+1.919.863.1797 FAX

Extron **Europe**
+800.3987.6673
Inside Europe Only
+31.33.453.4040
+31.33.453.4050 FAX

Extron **Middle East**
+971.4.2991800
+971.4.2991880 FAX

Extron **Asia**
+800.7339.8766
Inside Asia Only
+65.6383.4400
+65.6383.4664 FAX

Extron **Japan**
+81.3.3511.7655
+81.3.3511.7656 FAX

Extron **China**
+400.883.1568
Inside China Only
+86.21.3760.1568
+86.21.3760.1566 FAX

www.extron.com

© 2009 Extron Electronics. All rights reserved. All trademarks mentioned are the property of their respective owners.

09-10
68-1755-01
REV. A